THE

VETERINARY JOURNAL

Editor:

FREDERICK HOBDAY, C.M.G., F.R.C.V.S., F.R.S.E.,
HONORARY VETERINARY SURGEON TO HIS MAJESTY THE KING,
OFFICIER DU MÉRITE AGRICOLE (FRANCE),
CAVALIERE DEI SS. MAURIZIO E LAZZARO (ITALY),
HONORARY MEMBER OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION,
AND FORMERLY PROFESSOR IN THE ROYAL VETERINARY COLLEGE, LONDON.

Sub-Editor:
GLADSTONE MAYALL, M.R.C.V.S.

JULY, 1923.

Editorials

DR. SCHMIDT OF KOLDING

Our readers will be pleased to hear that Dr. Schmidt of Kolding is in a perfect state of health, and that the report of his death given in the *Recueil de Médicine Vétérinaire*, and quoted in the last issue of the Veterinary Journal, is incorrect. The error appears to have been due to the fact that a younger colleague, Schmidt of Aabenraa, died some time ago. We sincerely hope that the reading of his obituary notice has not caused annoyance to himself or given pain to his friends.

VETERINARY MATTERS IN CANADA

For several years now the Reports from the Veterinary Director-General of Canada (Mr. F. A. Torrance, B.A., D.V.Sc.) have been cheerful reading. They have indicated marked progress against animal diseases. No cases of foot-and-mouth disease, cattle plague, or contagious pleuro-pneumonia have been found in Canada since 1892. Mange in cattle is now well under control, and the active

disease centres in Alberta and Saskatchewan have been practically cleared up. Hog cholera and glanders outbreaks are insignificant, and are dealt with so well and promptly that only limited losses occur.

Perhaps the greatest advance has been made in dealing with tuberculosis by means of the accredited herd plan. Big amounts have been paid under the Municipal Tuberculosis Order as compensation for slaughtered cattle. From April 1, 1921, to March 31, 1922, 32,043 cattle have been tested and 4,740 reacted; the amount paid in compensation for 4,613 animals slaughtered being 533,161 dollars. As in Great Britain, the amount of tuberculosis in pure-bred herds is considerably larger than in the ordinary dairy herds.

Twenty per cent. of the hogs killed at inspected establishments showed evidence of tuberculosis, the infection being attributed to the drinking of infected milk or the by-products of cheese and butter factories. The prevalence of this disease in hogs is taken as an indication of its large incidence in cattle and of the danger to children through the milk and milk products of untested herds. The accredited herd plan is welcomed by breeders of pure-bred stock. Large numbers of herds are waiting to be tested. To cope with the work a bigger veterinary staff and increased compensation funds are necessary to avoid delay. Great good is being done in Canada by the carrying out of enlightened measures of veterinary effort, and there is much evidence that the value, need and benefit of this effort will be kept well to the fore by the present Veterinary Director-General.

COMPARATIVE MEDICINE

FOR some considerable time there has been a desire amongst medical men and veterinarians for a closer *rapprochement* in their work and for a common place of meeting, where diseases of mutual interest could be discussed from the comparative aspect.

It is true that the members of the one Branch have always been welcomed at meetings of the other, and their respective views always listened to with respect, but it has been felt that if a common meeting place could be found, that much valuable good might result by bringing together, and obtaining the opinions of, numbers of men, general practitioners as well as specialists.

The idea has at last taken definite shape, and the Royal Society of Medicine, whose membership numbers several thousands, has now established a section of Comparative Medicine, whose meetings will commence in October. There are very many diseases in which

both branches (the human and the veterinary) of the great profession of medicine are mutually interested, and discussions in which both aspects are undertaken at one and the same time cannot but lead to results for the common good.

Particulars in regard to membership of the Section, and also for complete Fellowship of the Royal Society of Medicine, can be obtained by application to Sir John MacAlister, the General Secretary, at 1 Wimpole Street, London, W.

PASTEUR AND VETERINARY MEDICINE

PROFESSOR VALLÉE recently gave an address on this subject at a meeting held by the Central Society of Veterinary Medicine of Paris in honour of Pasteur.

After placing him in the same rank as Galileo, Pascal, Michel Angelo and Molière, as the possessor of that divine flame that sets the seal of genius on scientific, literary or artistic work, Vallée tells how he studied the complex problems of fermentation, and came to the conclusion that it was due to the action of living micro-organisms, and upheld this view successfully against those who contended it was a physical process. Although in a letter to the Minister of Agriculture he says, when asked to investigate the diseases of silkworms, "consider, I pray you, that I have never touched a silkworm," yet he discovered two microbic diseases of silkworms, and showed how to avoid them by the selection of healthy stock.

On November 6, 1880, he was elected a member of the Central Veterinary Medical Society of Paris, and, though expressing astonishment at his election, he states that his presence is easily explained by the fact that "science is all one, and that it is only man with his feeble intelligence that makes categories of it, as he does for medicine, religion and politics." He then expresses the hope that through material supplied by the members he will be able to obtain cultures and to prepare vaccines against diseases afflicting animals and mankind. His first veterinary researches were against chicken cholera and anthrax, and then he tackled swine fever. There was a very happy association for many years between Pasteur, Chamberland and Roux, and these men traced the cause of anthrax, investigated the rôle of the spore, soil, foodstuffs, and earthworms. His work on puerperal fever and his discovery of microbic infection as the cause laid the foundation of all modern antiseptic and aseptic surgery. Lister applied Pasteur's teaching to surgery; and the good work of Boulet, Nocard, Arloing, Cornevin and Thomas, and a legion of human and veterinary surgeons in all countries, is due

to the foundation well and truly laid by Pasteur. A description of the savant given by his historian is, that " He was tall, straight, bright and pleasant, with a slightly grey drooping moustache, which did not hide a spiritual and sensitive mouth. His face was a courageous and good-humoured one. He was happy when putting his talent as an orator or writer at the service of those who worked to explain and expand their ideas."

His work, like that of Newton and great geniuses who may be compared with him, will always remain young. Certain details may age like the life and manners of another period ; but the depth and the method form one of the great aspects of the human mind and spirit which the passing of the years increases in majesty.

AN S O S FROM NATIONAL VETERINARY ASSOCIATION BRANCHES.

THE National Veterinary Association is not such a sturdy tree that it can afford to see its branches suffer from dry-rot and drop off without an effort to save them, and the removal of even only one of them is too serious a matter to be allowed to take place without serious and due deliberation between those who represent the controlling head of the parent body and those directly concerned at the other end.

Such a drastic step as the dissolution of an Association which has been in existence for nearly twenty years must not be allowed until the circumstances have been sifted thoroughly from every point of view, and before a Branch dissolves itself it should present a statement of affairs to the parent Society.

No Branch which has once become affiliated with the National Veterinary Association should dissolve itself. Such a course should only be possible by mutual consent of the Council of the National and the Council of the Branch concerned.

The Lincolnshire Branch is at the present moment so badly hit that its officials are debating whether it shall be carried on, and its energetic Secretary, Mr. Lang, has issued an S O S to try to get the opinion of the members.

What the reply will be remains to be seen, i.e. if the members will have the courtesy to reply ; for it must be confessed that on looking through the list which has been compiled the members under the heading " Notices ignored " far exceeded either those who attended or those who apologised for being unable to do so.

We all know the difficulty for anyone single-handed to get away for an afternoon, or perhaps a whole day ; we know, too, how

isolated and far apart from one another we are; but courtesy which prompts a reply and merely the expense of a postage stamp should be innate in all of us.

Something must be radically wrong when two old-established Branches (the Lincolnshire and the Southern Counties) openly advertise their inability to carry on. And even some of the bigger Branches are not exempt, for at a recent meeting of the Lancashire Branch the President, Mr. F. G. Edwards, stated: "It is regrettable that all our meetings are not attended as well as they might be." It all harks back to one thing—the absolute disregard of the motto we so proudly talk about when we are about to graduate and so completely neglect when we have got the diploma. "Vis Unita Fortior"—about *the* most inappropriate motto which could be applied to our profession as a body. There are over 3,000 members and yet one can scarcely count the workers for the profession itself in hundreds. *Those who will work may, but the remainder do not, although many of the drones of the hive are not backward at criticising.* Were it only "constructive" criticism this would not be objected to, but it is usually of the "destructive" variety. We are too poor and small to prosper if we are a "house divided against itself," and it is to be hoped that the S O S which is being issued by the Lincolnshire and the Southern Counties will meet with sufficient response to enable them to remain in existence to supply the need for collaboration and union which is felt so strongly at times in the respective districts in which these two Societies have been formed.

General Articles

PUSTULAR DERMATITIS

(Impetiginous Eczema)

By Lieut.-Col. H. WATKINS PITCHFORD, C.M.G., F.R.C.V.S., R.A.V.C.
Royal Army Veterinary School, Aldershot.

(*Continued from page* 197.)

Mechanical Exciting Causes.

The mechanical cause necessary to bring about the implantation of the organism is provided by the attrition or rubbing-in effect of the body-brush and wisps used in grooming when the animal is warm, or more frequently by the contact of parts of the saddle and harness during work or exercise. Simple contact of an affected horse with

one free from the disease would appear an uncertain method of spread, and can in any case be considered negligible under normal conditions of stabling.

The essential nature of this mechanical or implanting factor was shown by several experiments in which the coat of the horse was infected by dusting infected material upon the normal hair or placing such infective material directly upon the clipped and shaved surface of the skin. Even where virulent fluid cultures of the organism were brought into contact with the skin and allowed to dry upon its surface, no involvement of the skin resulted, but where this procedure was followed by the application to a skin area warm after exercise of even a light degree of friction—such as was produced by rubbing the surface with a cotton-wool plug—the organism became implanted and infection resulted.

Attrition will thus be found to explain the frequent incidence of the eruption under the saddle or collar, or at the points of contact of the trace, etc., and from experiments undertaken at the Royal Army Veterinary School it appears extremely probable that this factor of pressure or rubbing is the most important—as well as the most easily controlled—of the causes bringing about the disease.

Recognition of the essential nature of pressure in the production of the skin lesion led to an endeavour to estimate the comparative influence exerted by the various agents—brush, harness, rug, etc. Such points are dealt with separately in the various appendices rather than in the body of this report. This has been done in the endeavour to avoid obscuring essential points and significances by such detail as is of importance only in showing the means adopted to secure the end.

Saddle Pressure.

The examination of the various factors producing friction or pressure show that while the saddle-sites (and to a lesser degree those of the breast harness) are generally involved in the eruption, any skin area of the body subjected to vigorous manipulation with a brush or wisp is liable to involvement if the organism in question is present. The most certain way of producing the disorder experimentally appears to be by placing minute quantities of bacterial dust, or other infective material, upon the animal's back under the pressure parts of the saddle and exercising the horse for an hour. In such case the slight movement of opposing surface of the saddle during the movement of the horse is sufficient to implant the organism and establish infection.

If the infecting material has been sprinkled over the whole of the animal's back, involvement of the skin follows upon the pressure

surfaces only. Infection has not been found to attend the mere contact of the organism with the skin—such as in the painting or powdering of the skin with a culture of the organism in question.

Grooming Influence.

Involvement follows, however, upon the use of the brush over a skin area previously infected, but only if such stimulation is applied to the skin when the animal is warm from exercise, and in this way regions become involved which are not areas of harness or saddle pressure—such for example as the sides of the neck.

Freedom of Extremities.

No case of involvement of the lower extremities has been seen or reported—a matter of remark, seeing that these parts suffer frequently from other forms of dermatitis, and are certainly subjected to considerable stimulation by the brush. This would appear to be explained by the fact that the organism in question is deposited from above in the form of dust—from grooming, etc.—upon the hair, and finds much easier access to the depth of the coat on the body than upon the legs with their vertical thatch of hair. As the horizontal surface of the back is the general site of the eruption, the fact appears to strengthen the theory of aerial infection.

Rugs and Brushes not Factors.

That transferernce of particulate matter over considerable distances is easily effected from horse to horse during grooming in the stables was proved during experiments in connection with the spread of ringworm, where it was shown that dust from one animal's coat could in certain states of light and air currents be detected floating in the air some eight or ten stalls distant from the one in which grooming was in progress. Experimental observation brought out the unexpected negative result attending the use of the rug worn by the animal suffering from the disease when used on another horse. In no case could infection be established in this manner.

Similarly a negative result attended the use of brushes previously used upon infected cases. Even where the brush itself was artificially infected before use, involvement of the skin failed to become established, nor did the soiling or infection of the lining of the saddle prove more successful.

Such negative findings are of use in endeavouring to determine the ætiology or actual factors concerned in the production of the disease, and in devising measures of prevention for the same.

Constitutional Reaction.

In whatever way the organism gains access to the skin of the horse, a certain amount of constitutional as well as local reaction ensues (see Appendix IV). In twenty-four hours heat and tenderness are noticeable over the area involved, and the site becomes tumified if the skin invasion is at all extensive, pain is present, a point which the clinical evidence strongly endorses (Appendix II, Question No. 16). Constitutional symptoms follow in severe cases, and the temperature rises some two or three degrees F. See chart on page 232.

Lymphatic Involvement.

Lymphatic vessels draining the involved region become prominent as soon as the lesion commences to develop, and remain enlarged for the three or four days during which heat and tenderness of the area persists. This involvement of the lymphatics is not constant, but it appears to attend all extensive infections. A good photograph of such lymphatic involvement or "cording" at the twenty-fourth hour can be seen surrounding the two small centres of artificial skin infection shown in Figs. 1 and 2. Clinical evidence as to this frequency of lymphatic involvement varies considerably, *vide* Appendix II, Question No. 17, seven observers reporting such involvement as occurring in from 7 per cent. to 5 per cent. cases, while nine were unable to record the condition as existing. Probably involvement occurs in every case to a varying degree, and the temperature disturbance will be found to bear a relation corresponding to the degree of lymphatic involvement.

From differences in cases observed it seems probable that the factor of predisposition or individual resistive power—other things being equal—governs the severity of the attack which results upon infection of the body-surface. In this way the tendency of the eruption to pass from a discrete to a coalescing type, or for variances in constitutional reaction and lymphatic involvement to obtain, is more readily explicable than upon grounds of an enhanced virulence of the microbe itself, although the probability of this latter factor must be admitted at times to obtain in view of the occasional wide outbreaks of the disorder.

In one experiment made upon a horse in a state of extreme emaciation (from bowel trouble) the implantation of the organism by gentle friction was followed by such intense tissue reaction as to lead, within forty-eight hours, to a confluent lesion from which pus was freely dropping, a result obviously due to a lessened state of resistance, both systemic and local.

Thinness of skin appears also a factor inclining towards the severe type of eruption, and suggests a reason why the mule, with its denser

FIG. 1.

FIG. 2.

dermal structures, is so generally resistant. It is in those cases where predisposition or thinness of skin exist that recurrences might be expected, and it is thought that systematic and extended observations will prove this to be the case.

The evidence so far secured on the point of recurrences in the same animal or stable is not sufficiently ample to warrant final decision.

Loss of Efficiency and Duration of Disease.

Although Pustular Dermatitis is a disorder of a minor character and not likely—under the well-ordered conditions of home service—to assume alarming proportions, it is at times the cause of considerable loss of efficiency in the aggregate. Answers to Question No. 19 of Appendix II show that the loss of efficiency—i.e. duration of disease in a horse necessitating withdrawal from duty—is variously computed at from seven to twenty-one days, dependent upon the type and site of the lesion. In several cases, however, the period is considerably longer, as the lesion involves the deeper layers of the dermis and renders impossible the application to the surface of anything like pressure and friction until the hair over the site of the lesion has grown to something like its normal density. Where skin lesions are scattered or are the outcome of the vigorous application of the body-brush on sites free from harness-contact, the resulting incapacity is slight so long as disfigurement is not marked. Where, however, a small lesion is produced at a point of pressure by harness or saddle friction, the period of treatment often tends to become prolonged to a degree out of all proportion to the trivial nature of the lesion itself.

Hair Changes.

Hair becomes rapidly restored, however, over the affected part, and so far as can be observed or ascertained no material change of colour ensues even after severe attacks, although the clinical evidence on this point is conflicting.

Preventive Measures.

Such loss of efficiency can be guarded against by an early recognition of the condition in question and the mechanical factor leading to its establishment, viz. friction. Where even slight eruptive conditions are found to attend the changes of the horse's coat it will be well to avoid all forms of pressure or friction—whether by harness, saddle or brush—until such time as detergent measures have been taken, not only with the skin at the precise site of the threatened eruption, but widely over the neck, back and sides of the animal. In such way the possibility of generalisation or of local extension will be guarded against,

and the original restricted forms of disease will alone remain to be dealt with. Such precautionary disinfection of the coat can rapidly be accomplished by the swabbing or saturation of the hair and skin covering the pressure or predilection sites with a solution of perchloride of mercury 1 in 750, such as will be always compounded from Service veterinary chests. In this manner any latent infection will be removed and no material interference with the routine use of saddle or harness will be caused, nor will there be any need to disuse the brush during the period when its mechanical effect is of the greatest benefit in the removal of the old hair and stimulation of the growing coat.

As previously remarked, inability to secure evidence tending to show that the infected rug or stable-tool is a factor in the dissemination of the disease should not cause relaxation in the precautionary measures generally adopted, but there would appear no necessity for the drastic and often destructive disinfection by heat or strong chemical agents which are essential to ensure freedom from infection in some other skin disorders.

Even in the face of severe and extensive outbreaks of the disease in question it is not likely that such agents as the rug or brush will be found to be concerned in the spread. When and where such disease-conditions arise the general use of the perchloride swab or calcium sulphide dip will be likely to prove the more effective and the more easily adopted precautionary measure, and attended in the aggregate by the least inconvenience in application. The use of the dip-bath during the change of the horse's coat has been observed during a number of seasons, and has been found to be attended with great apparent assistance to the animal in the mechanical removal of loose hairs. Evidence of this fact is available from observation of the large percentage of horse-hairs composing the sediment which accumulates at the bottom of a frequently used dip at the spring and fall of the year. The operation of dipping may be repeated at short intervals without harm to the horse. Should necessity therefore arise for the frequent immersion of horses in order to control an extensive outbreak of the disease, no hesitation need be entertained as to the impunity with which such dipping measures may be adopted if the dip-bath is available for use.

The serological observations of Appendix III have been undertaken in view of the possibility of the control of an outbreak of an extended and aggravated character such as has been experienced in the United States of America and elsewhere in the past. These observations serve to show the ease with which a physical response can be produced in animals by the use of the bacterial bodies of the

organism in question, a protective response in all ways akin to that evoked in other pus-conditions by the use of the invading organism itself. The production in quantity and issue of such a vaccine could, if necessity arose, rapidly be effected, and its general application would be a routine measure within the easy competence of the executive veterinary officer controlling the outbreak.

No recommendations are made here concerning the treatment of the local lesion itself, as such would appear unnecessary. Astringent antiseptics (such as sulphate of copper) would appear to be preferable to caustic or powerful agents such as carbolic acid. The desirability of the medication of the skin-surface surrounding the lesion has been already suggested as a means to restrain any tendency to spread from the existing focus.

It is hoped that the foregoing observations may be of use in the case of an outbreak of the disease of a sweeping or extended nature, a type of disease not unknown in the past.

APPENDIX IV

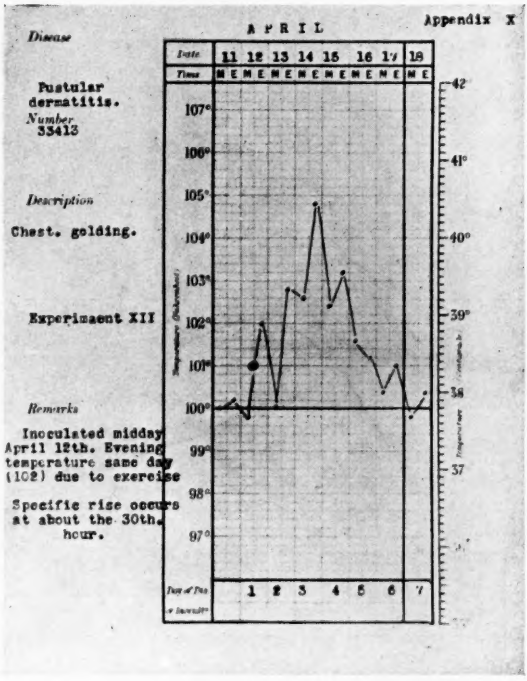
CONSTITUTIONAL SYMPTOMS AND CHARACTER OF LESION

Wherever skin invasion is extensive or the local incidence is severe, a certain amount of physical disturbance is to be noted, as shown by rise in temperature (*vide*. chart, p. 232), impairment of appetite, etc. Pain is a constant accompaniment of the lesion of confluent type, as is involvement of the lymphatic vessels draining the affected area. Where the eruption is extensive, but discrete, as in Fig. 3, consisting merely of a number of scattered pimples or pustules, the skin of the whole area appears involved in the inflammatory process, and the hair tends to stare particularly over the spots of actual invasion. No itchiness has been observed, such as frequently attends other nodular eruptions. Examination of the discrete nodule in an early stage will show a small elevation involving the site of several hair-follicles, the individual hairs appearing enclosed by and protruding through the swollen base in erect tufts. Within twenty-four hours a honey-like serous exudate can be observed exuding around the hair shaft and coagulating into an amber crust and matting together the hairs of the region, which at this stage is hypersensitive, *vide* Fig. 4. If several such nodules tend to coalesce, a scab of varying dimensions forms over the affected side, from beneath which pus may be made to exude by pressure. Where the site involved is small and the type of eruption discrete, the scab tends to separate about the fifth day from suppuration, and exfoliation is complete in seven days ; where,

FIG. 3.

FIG. 4.

however, the surface involved is greater, a much longer time elapses before separation is complete and the extreme sensitiveness of the part abates. In such latter case the surface of the lesion tends to fissure



or crack in the healing process, and it is some weeks before the long hair forces its way through the occluded follicle to the surface of the skin. The colour of the new hair appears at first somewhat darker than that of the surrounding coat, but when full grown the precise spot of the eruption cannot be detected. No loss of pigment resulting in a growth of grey or white hairs (giving rise to a flea-bitten appearance of coat) has been recorded during the present observations, nor would there appear to become established any degree of local resistance to a fresh invasion of the same area.

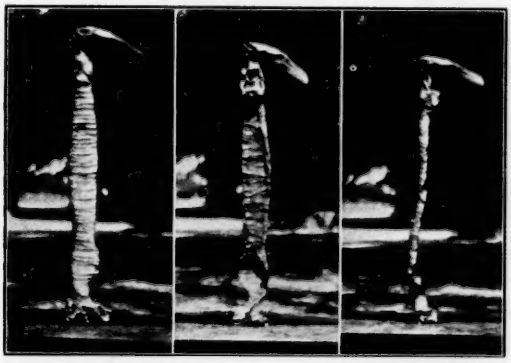
Clinical Articles

A PECULIAR CASE OF DEFORMITY OF THE TRACHEA IN A PACK MULE

By Capt. A. J. PLUNKETT, O.B.E., ROYAL ARMY VETERINARY CORPS.

Pack Mule No. 24, of 24th Pack Mule Cadre, a bay Argentine mule 12 hands high and aged ten years old, received from Mule Depot, Meerut, on 19.12.22, and found to be a bad roarer. I examined the case and took the animal into the hospital 9.2.23, as he was unable to do hard work.

Examination and exploration of the nasal region revealed no



No. 1. No. 2. No. 3.

evidence of any obstruction. The nature of the noise did not leave it clear to me where the cause of it lay.

I examined the pharynx and entrance to larynx, and could find no trace of anything to account for the roaring in those parts.

The trachea was next opened at the seat of tubing to see whether such opening could give relief, but it was found that the animal still showed marked distress when worked.

Owing to the very thick muscular neck of the patient no irregularity in the shape of the trachea was noticed up to this time, but on discovery that the opening in trachea gave no relief, a more careful examination of the lower trachea by handling from the outside revealed a distinct and extensive deformity. It appeared to be a dorso-ventral flattening of the pipe.

It was decided that there could be nothing done to render the animal serviceable, so he was destroyed.

On post-mortem the organs were all found normal except for :—

(1) Emphysematous patches in both lungs, probably due to the laboured respiration.

(2) The trachea.

This organ was removed, carefully dissected from its surrounding tissues and presented the following appearance :—

Laryngeal end and first three rings normal.

Bronchial end normal.

Between both ends practically the whole pipe was flattened dorso-ventrally and the dorsal surface was composed almost entirely of membranous tissue, the ends of the rings having separated about 4 inches from each other at the widest parts.

Three photographs are attached to show the shape of the trachea.

No. 1 is ventral aspect.
No. 2 is dorsal aspect.
No. 3 is lateral aspect.

It would be interesting to know how this extensive deformity came about and if such has been seen before. There was no history of any injury or other occurrence to explain the case.

The noise made by this animal was not an ordinary roar. It was rapidly intensified when the animal was made to do any work, and resembled the low notes of a bassoon.

CHRONIC SABULOUS UROCYSTITIS

By Major H. ALLEN, R.A.V.C.,
Remount Depot, Saharanpur, India.

Subject.—Chestnut, country-bred, entire, 12 hands 2½ inches, three years old.

History.—He was brought to me two days before death in a prostrated condition, running a temperature of 102·4 to 104·6, with the unpleasant information that he had been ill, due to very many incorrectly assigned causes, for the period of one and a quarter years.

Rectal exploration, and the passing of the catheter, coupled with clinical symptoms, rendered diagnosis comparatively easy. My prognosis was decidedly unfavourable, as the case had reached a stage where urethrotomy, and subsequent flushing out of the bladder and urethra would have been useless.

The bladder felt like a hard spherical mass, and was very painful

on digital manipulation *per rectum*, revealing the fact that there was a thickening and contraction of the mucosa and muscular coat.

The catheter was passed with difficulty, causing evidence of marked pain, and a gritty sound. Pieces of greenish coloured mucus or tissue containing yellowish amorphous pulverulent deposits voided with a very small amount of dark coloured fetid urine.

Symptoms.—Stiff, straggling gait. Back arched. Highly infected visible mucous membranes. Constipation, and retention of fæces in the rectum. Signs of uræmia as a complication. Stranguria. Ischuria occurred daily, evidently due to obstruction of the urethra by exudation, or pieces of necrotic tissue. Dark coloured purulent blood-stained urine was passed in drops, and sometimes contained pieces of necrotic tissue with a sabulous deposit.

A very small amount of urine was drawn off by means of the catheter.

Respirations were accelerated, temperature raised, and the pulse was very weak.

Emaciation and general symptoms of prostration of a toxæmic character.

Autopsy.—The mucosæ of the bladder and urethra were thickened and corrugated, and of a greyish-green colour (gangrenous).

Incrustations of a yellowish sabulous deposit (sandy in consistence) were demonstrated all over the mucosæ, evidently due to lime salts eliminated from the urine.

Marked hypertrophy of the muscular portion of bladder and urethra. The lumen of the bladder and urethra appeared very small after incision, due to the morbid thickening and contraction of the mucosæ and muscular coats.

Rupture of the inferior portion of the bladder near the neck. Kidneys: dilatation of the renal pelvis and nephritis. Right kidney weighed 3 pounds 4 ounces. Left kidney weighed 3 pounds 2 ounces.

Treatment.—The bladder was irrigated three times daily with a 2 per cent. solution of warm boric acid solution by means of a catheter, with attached rubber tubing and pump after withdrawing the urine, which as a rule only amounted to a couple of ounces.

Extract of hyoscyamus, and sodæ bi-carbonate were administered every five hours.

Linseed tea was given *ad lib.*

Bacteriological Examination.—Examination of material collected from the urogenital tract showed microscopically that the sediment consisted almost entirely of calcium carbonate and calcium oxalate.

These substances are, however, found in the urine of normal horses. The deposit obtained on centrifugation also revealed some mucinous and unrecognisable material, probably the remains of casts and pus cells, together with very large numbers of small bacilli, coccobacilli, and numerous streptococci.

A CASE OF AORTIC ANEURISM IN THE HORSE

By W. HUGHES, M.R.C.V.S.,
Caerwys, North Wales.

The patient, a carriage mare, fourteen years old, which I had known for several years, suddenly developed symptoms of dyspnœa, accompanied by great distress and unsteady gait when at work. These disappeared when she was pulled up, but reappeared when put to the exertion of ordinary work again, and eventually got so bad that she could not trot for even 50 yards.

One day, after being led in hand and returned to the box, she developed a sudden spasm of the larynx and died before tracheotomy could be performed.

Post-mortem examination revealed an aortic aneurism as large as an ordinary-sized orange close to the heart, and the pneumogastric nerve was stretched to its fullest extent over it.

A NASTY STAKE WOUND

By W. GARDNER, M.R.C.V.S.,
Maybole.

On August 29th last, in the early hours of the morning, I was called to a seven-year-old pedigree Clydesdale mare.

The messenger informed me "that the mare was at grass, was all right the night before, but was found in the morning standing in the corner of the field, showing a little blood on the inside of her hind legs, and they could see a small hole up in her groin, and they could not get her to move from the spot."

I found the mare as described, showing rigors, with cold patchy sweats, very dull, with her head carried low.

The orifice of the wound, situated in the right groin, close to the side of the mammary gland, was sufficient to permit the entrance of my forefinger and thumb. On exploring, I found at a depth of 2 inches the end of a wooden stake, which I could not move by traction, and the fleshy parts of the groin were swollen, tense and painful.

As it was difficult to determine the direction the stake had

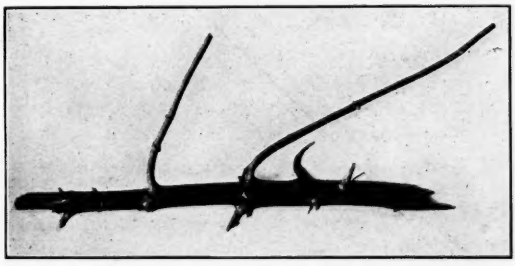
taken, and fearing sequelæ which might prove fatal, I decided not to cast the mare.

On further examination, I discovered another piece of wood embedded in the surrounding tissues of the flank, and being quite flexible, it yielded and came to orifice of the wound. Eventually, under gentle traction, the main stem began to move, and I concluded there might be several similar spikes or shoots. This proved correct, as seen in the accompanying photograph.

Ultimately, I secured the end of the main stem with a pair of torsion forceps, and under leverage in the proper direction, it was evident that the course of the wound was upwards, backwards and outwards, finishing under the skin behind the angle of the haunch, where the proximal end of the stake was now distinctly felt.

By gentle traction and rotation I pulled out the stake.

Measurements of the stake—a photograph of which I enclose—were: Length of main stem, 19 inches; longer branch, 7½ inches; smaller branch, 13 inches; circumference of main stem, 3 inches,



with thirteen 1-inch spikes thereon. After removal of the stake, the mare walked freely 500 yards to the farm, where she was placed in a loose box, and given a sharp dose of cathartic medicine and tetanus anti-toxin hypodermically.

Treatment consisted of antiseptic irrigation of the wound for two hours twice daily with a long nozzled syringe for six days. On different occasions several pieces of wood bark were observed to come from the wound, but very little purulent discharge. On the seventh day a considerable swelling appeared along the floor of the abdomen and towards the fore legs. This was freely pricked with the point of a Syme abscess-knife and a tight blanket compress placed round the body of the mare.

The tetanus anti-toxin was twice repeated on alternate days.

But for the sickening caused by the physic on the second day, the mare never went off her food, and made an uneventful recovery, and was in work within a month.

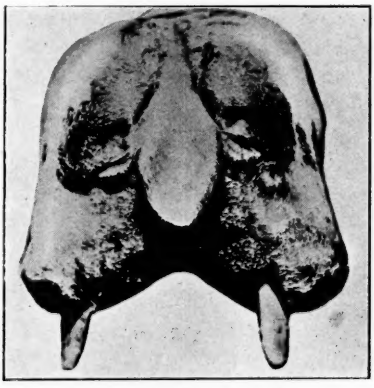
A BI-CAPITATE CALF

By W. GARDNER, M.R.C.V.S.,
Maybole.

On March 12th I was called to an Ayrshire cow in labour, eight years old, bred and reared by owner, and said to be four days past her time. I learned she had previously given birth to six calves (once twins, as a six-year-old), and that her dam had also given birth to twin calves.

On examination, I found both fore feet presented in the passage, with apparently slight deviation of the head to the left, downwards and backwards.

Roping the fetlocks and repelling the calf, I applied traction to



the lower jaw, and the head came readily to the hand; but I had difficulty in completing extension of the neck.

Elevating the quarters of the cow with the pulley rope, and further repelling the fœtus, I came upon the second head.

My first impression was that I had to deal with a double birth, and I must admit it was only after careful examination that the truth dawned on me.

Placing a cord on the lower jaw of the second head, the neck was extended and delivery of a live heifer calf was effected in a short time.

The calf, which weighed 73 pounds, was slaughtered a few hours after birth. The heads were photographed and afterwards dissected.

They appeared of normal size, both being 9 inches from poll of head to nose, and 4 inches across the faces between the orbits.

The heads were natural in appearance in every respect, excepting that there was only one ear to each head.

The cranial cavities were complete, but there was only one occipito-atlantal joint. The body, limbs and internal organs appeared normal.

The cow made a good recovery.

SEASONAL OR NON-CONTAGIOUS DIARRHŒA OF CATTLE IN THE CENTRAL PROVINCES, INDIA

By Major R. F. STIRLING, F.R.C.V.S.,
Indian Civil Veterinary Department, Nagpur, India.

Introduction.—During the rains of 1920 the attention of the author was drawn to the loss occasioned to stock-owners by the prevalence of diarrhœa amongst their cattle. This diarrhœa was seen, almost invariably, during the months of June and July, that is to say at the beginning of the rains.

The loss to the stock-owners spoken of above was of a two-fold nature :—

(*a*) Rapid loss of condition and decreased powers amongst working bullocks.

(*b*) Decreased supply, and in many cases complete cessation of milk, amongst milch animals.

Rao Sahib G. D. Khandker, Deputy Superintendent, Civil Veterinary Department, who was then in veterinary charge of the Berar Division, a man with thirty years' experience in that Division, gave the author some very useful information on the above points. He stated that so far as he had seen, an attack of diarrhœa meant, under the then mode of treatment, in the case of working bullocks, an average loss of five and a half working days, or nearly six rupees (eight shillings) at current rates.

With regard to milch animals his opinion was, that at least half the milk supply was lost, not only during the course of the disease but for some time afterwards. He said that in some cases the cessation of milk became permanent.

Symptoms of the Condition.—In the beginning the temperature is normal, but rapidly falls to sub-normal in severe cases.

Hindquarters and tail are stained by liquid fæces of a bright green colour.

Tympanitis is noticed in the majority of cases.

Fæces are passed at intervals of about twenty minutes without straining or signs of colic ; fæces thus passed become gradually

more liquid, until at the height of the condition over 80 per cent. of water is found in each motion.

Flati are passed in conjunction with the fæces and have a characteristic odour, which can perhaps be described as that of stale cabbage water. Rumination is suspended. Great thirst is evinced.

There is a diminution or even cessation of milk in milch animals.

In severe cases the respirations become hurried, with dilation of the nostrils and discharge of tears from the eyes.

Cause of the Condition.—It may be accepted that the cause of most diarrhœic conditions is the ingestion of some injurious materials. Whether the resultant symptoms are due to natural efforts of the bowels to rid themselves of such material or whether they are due to bacterial action and the consequent formation of toxins is a question upon which veterinarians seem to differ. Experience, however, seems to prove that almost all diarrhœas, and certainly that form of the disease with which this paper is concerned, arise from the formation of bacterial poisons.

The next point to be considered then is whether this condition is set up by the ingestion of poisonous plants and the formation of toxins, or by the toxins of fermentative bacteria, which result from over-indulgence in green food.

Inquiries were instituted and veterinary assistants were asked to supply specimens of the grasses or shrubs which were the first to make their appearance at the beginning of the rains.

There is lack of anything approaching unanimity as the result of this investigation.

Replies and specimens came from eight districts in the Nagpur and Berar Divisions, and with one exception no two districts agreed as to the plants which in their earlier stages were considered to have a poisonous effect on cattle. This exception, which was returned by four districts, was *Cassia Tora* (natural order, Leguminosæ ; vernacular name, *Tarota*).

All stock-owners from whom inquiries were made stated that animals will not eat *Tarota* in its mature state, but that they will consume it when it is the only green plant available. Investigations have failed to bring to light any poisonous quality in this plant.

From such insufficient data it is impossible to come to any definite conclusion, but so far as one can see at the moment it is probable that the diarrhœic condition arises from the toxins of fermentative bacteria which result from over-indulgence in green food after months of abstention therefrom.

Diagnosis.—Is simple. If the condition occurs at the beginning

of the rains, the temperature alone will distinguish it from all contagious diarrhœas.

Prognosis.—Is favourable.

Treatment.—Inquiries were made as to the mode of treatment adopted in such cases.

The most common treatments were :—

(*a*) The orthodox method of administering a quantity of oil followed by powders of catechu and chalk.

(*b*) Powders of catechu, opium, chalk, and carminatives without previous administration of oil.

(*c*) The physiologically wrong method of administering sedatives such as chlorodyne or Tinc. Opii.

It was decided to try to find a mode of treatment that would be at once more efficacious and less expensive than the only physiologically sound one of the above three, i.e. (*a*).

A treatment along the lines of that adopted by the Medical Profession in cases of cholera and choleric diarrhœa suggested itself.

During the rains of 1921 experiments were made at the Headquarter Hospital in Nagpur, and as a result of these, the dose, frequency and method of administration which are detailed below were decided upon.

Working on the theory, for it is nothing more, that the condition resulted from the toxins of fermentative bacteria, the following treatment, based on Sir Leonard Roger's treatment of cholera, was adopted by the author.

℞ Potass. permang. .. .. .. grs. xx.
Aquæ .. .. ad Oii.
M. Ft. haustus.

Sig. : Give one such dose every half-hour until 2 drachms of the potassium salt has been administered. If necessary repeat.

The above was the prescription given in the case of a mature bullock, and was varied with the age and class of animal in accordance with established practice.

No other medicine of any kind was administered in any of the cases.

Result of the Treatment.—285 animals have been treated in this manner, and of these 283 were cured and two died. Of these latter one succumbed within an hour of admission to hospital. With regard to the other the Veterinary Inspector in charge was of opinion that death was due to the after effects of rinderpest.

Of the 283, 65 were cured before or just after the administration of the sixth dose—that is within three hours of the commencement of the treatment. These 65 were indoor patients. Regarding the remainder (218) no exact information could be acquired, as they were "outdoor patients," and were supplied with medicine, which was given to the animal by its owner.

It is probable that in many such instances the intervals between doses and the amount of dilution were not adhered to.

However, in all these 218 cases each veterinary assistant in the districts concerned did follow them up and found them cured.

To return to the 65 cases of which we have got accurate knowledge, the following is of interest:—

11	cases	stopped	purging	after	1 dose.
7	,,	,,	,,	,,	2 doses.
17	,,	,,	,,	,,	3 doses.
2	,,	,,	,,	,,	4 doses.
2	,,	,,	,,	,,	5 doses.
26	,,	,,	,,	,,	6 doses.

Conclusions.—The author is diffident about drawing any conclusions from the insufficient data which he has detailed. His idea in submitting these facts to the veterinary profession is simply to open up a new avenue of thought regarding diarrhœa.

If the author is right in his supposition regarding the causation of this diarrhœa, then the treatment by internal antiseptics is justified.

From a material point of view, and it is one which must always occur in any veterinary paper, the treatment suggested is manifestly much cheaper than those usually adopted.

The author regrets that owing to inadequate accommodation for the conduct of experimental work and to the pressure of routine duties, the results obtained may appear inconclusive.

He hopes, however, that he may yet be able to place some further facts concerning this condition before the profession, from whose members he would be glad to receive criticisms and suggestions.

Thanks are due to all the subordinates who supplied material and also to Mr. Nair, who collated the facts presented by the veterinary assistants.

BIBLIOGRAPHY.

Cholera and its Treatment, by LEONARD ROGERS.
Some Diseases of Cattle in India, by WALKER.
A System of Veterinary Medicine, by WALLIS HOARE.
Experiments on the Treatment of Rinderpest by Various Drugs, by BOGNTON.

DISLOCATION OF THE FETLOCK JOINT IN A HEIFER

By W. E. ARMSTRONG, B.V.Sc., M.R.C.V.S., D.V.H.,
Wigton, Cumberland.

During the present month I was called to see a heifer two and a half years old and three months pregnant which was supposed to have a broken leg. The animal had been galloping in a steep field with some other young cattle, and had slipped on approaching the fence.

On examining the animal, which was chewing its cud at that time and did not appear to be suffering the acute pain usually seen in fractures with such displacement, it was found the line of direction of the leg from the fetlock joint was inward. On digital examination the outer condyle and ridge at the inferior extremity of the metatarsal were easily felt through the skin, and on the inner side of the leg the inner glenoid cavity of the inner or suffraginis was identified. Although no weight was placed on the leg, there was no difficulty in establishing a diagnosis.

As the animal was unused to being restrained, I thought reduction under anæsthesia the best method, so the anæsthetic was first administered with the animal standing. She was soon completely under, and a rope was attached just above the hoof, and steady traction applied in the same direction as the foot was pointing. I then pressed on the side of the distal extremity of metatarsal, and with a very small "click" the dislocation was reduced. The joint then flexed and extended normally. A flannel bandage and sodium salicylate completed the treatment. Next day the heifer was again turned into the same field, and showed very little lameness or swelling. The bandage will be left in position for another month as a support to the joint and injured ligaments.

I attribute the easy reduction in this case to the use of complete chloroform anæsthesia.

URINARY CALCULI

By FRANK CHAMBERS, O.B.E., F.R.C.V.S.,
Wolverhampton.

The accompanying photographs illustrate two interesting cases of calculi in the bladder of the dog.

The first case was in a Pekinese bitch six years old—weight 5 pounds. She had been passing blood-stained urine for two years. The patient was in very poor condition and appeared to be *in extremis*. When held up by the front legs a small quantity of blood-stained urine would dribble from her. On palpation the

bladder could be felt as a hard lump, which I took to be distention with urine.

An injection of morphia ($\frac{1}{2}$ grain) was administered, and almost complete narcosis was evident in twenty minutes.

On opening up the abdominal cavity the bladder was seen to be extremely distended and hard. It was obvious that it was completely distended by an enormous calculus. On cutting through the wall of the bladder it was found that the calculus was adherent to the mucous membrane except where the ureters entered. A small channel on each side running to the neck was the only space available for the collection of urine. The greatest difficulty was experienced breaking down the adhesions between the calculus (which weighed $2\frac{1}{2}$ ounces) and the bladder. The patient became conscious nine hours after the operation. Stimulants were administered together with an injection of pituitrin and adrenalin.

SKIAGRAPH SHOWING POSITION OF CALCULI IN SECOND CASE.

CALCULUS OF FIRST CASE.

CALCULI OF SECOND CASE.

Twelve hours after the operation she walked out of her basket and passed a small quantity of blood-stained urine. At the twenty-

fourth hour she commenced to sink, and in spite of all remedial measures she died at the thirty-sixth hour.

Post-mortem revealed but little. No leakage from the bladder, and the wounds appeared to be healthy.

The second case was also a Pekinese dog, four years old in good condition. It had been ailing for some months. One day he would micturate freely, whilst on the next there would be difficulty. I diagnosed a calculus in the bladder, but the owner would not consent to an operation. Eventually complete obstruction took place, and the dog was very distressed. A catheter was passed and the calculus dislodged from the neck of the bladder. A large quantity of blood-stained urine was drawn off. In order to make certain of my diagnosis Dr. Dyas kindly radiographed the dog, and the skiagram plainly showed the size and position of the calculi. The retraction of the two calculi by means of the suprapubic method was a simple matter.

A CASE OF RABIES IN A GOAT

By T. N. KULKARNI, G.B.V.C.

Subject.—A five-year-old she-goat.

History.—The animal was brought to the Kalyan Veterinary Dispensary on January 16, 1923. On the evening of the previous day she was seen by the owner trying to butt all persons and animals that approached her, and she passed a restless night, bleating at short intervals.

Symptoms.—The owner, who was holding the animal by the horn and neck-rope, was asked to tie her to a post. She began to bite the corner of the cement wall and swallowed a few small grains of sand. She kept on butting the post and wall with her head at short intervals, but seemed to feel no pain. At this stage it seemed that she could recognise the owner. Her furiousness, biting and butting were aggravated when another goat, dog or any person passed in front of her. Arching of the back at short intervals was also one of the marked symptoms in this case. She was careless about her kid. When green leaves were thrown before her, she picked up one or two in her mouth and dropped them down very shortly. She remained standing, but constantly changed her place. No sign of a bite by another animal or dog could be found on the body. History of the case also did not support this important part of the case.

Disease Suspected.—Rabies.

Further Observation.—I kept the animal under my further observation after explaining to the owner the disease I suspected and the danger to the public from the animal. The symptoms shown

during the observation were biting her own body—inside and outside the right thigh. I examined this part of the body for any sign of previous wound, but none could be found; she was furious and looked very angry when approached by any person. On the second day all the symptoms were aggravated, eyes more prominent and staring, complete cessation of rumination, loss of appetite, restlessness, and there was marked change in the voice. Her voice resembled that of a dumb man calling a person at a distance rather than that of any other animal. There was marked loss of flesh. On the third day there was much exhaustion, great loss of flesh, and all the above symptoms being present in a more or less degree. The animal died during the night.

Post-mortem Examination.—Rumen and reticulum contained ingesta mixed with foreign bodies, such as grains of sand, earth, few hairs (probably of her own body), and an unbroken small mango-seed. Ingesta was almost drained, and was found in a state of two semi-solid balls, and these were firmly adherent to the respective inner coats of the stomach. The honey-comb impression of the reticulum was quite distinct on the ingesta. The third and fourth stomachs were almost empty, and the intestines likewise. The remaining organs showed no alteration. The appearance of the brain was normal, except that it was pulpy. The brain was preserved and sent in two pieces to the Director of the Bacteriological Laboratory, Parel, Bombay, for examination. He found the Negri bodies in the brain, and gave his opinion that the goat had died of rabies.

Conclusion.—In conclusion I should like to remark that as all the symptoms given by the authors cannot be seen in a particular case, so it is here. There was no genital excitement, which is one of the characteristic symptoms of rabies. The animal in question did not show this symptom when it was with the owner. Secondly, there was no marked discharge of saliva. There was no stamping of the feet. The absence of these three symptoms was counterbalanced by the marked arching of the back at short intervals, by keeping the hind legs a little backward and apart. This particular case was one of furious rabies, and I should like to ask whether dumb rabies is also found in the sheep and goat.

RHODODENDRON POISONING IN A GOAT

By PHILIP VINCENT, M.R.C.V.S.,
Romford.

On Sunday night last a client was putting his goat (a nanny with a kid a week old) up for the night, when she escaped into the front garden, where she ate some rhododendron leaves or twigs.

The following morning he found her very ill. I did not see her until eleven o'clock, when I found her retching and vomiting, with heaving flanks, and uttering the most piteous bleatings imaginable. Not knowing what better to do, I gave her a subcutaneous injection of morphia, and called round again at 3 p.m. As she had calmed down a little, I gave her a dose of castor oil, then in the evening I gave another dose of morphia: she was still very distressed, with what I considered to be a death-like expression. But the following morning she was much calmer. I then gave her an egg beaten up in milk every four hours. We continued this treatment, and occasionally a little oatmeal gruel, until Thursday morning, when she commenced eating a little grass, and she is now quite well again.

The rhododendron was a dwarfed and unthrifty specimen, and the goat ate the old leaves, which had been standing all winter, and which, I presume, contain the poisonous properties in a concentrated form. This goat belongs to a poor family, and was like a member of the family, and lived on the fat of the land, so it seemed to me strange that she should eat (and she did it with avidity) these poisonous leaves. It only shows that an animal's instinct is not always infallible.

AN OPERATION FOR THE RELIEF OF SCROTAL HERNIA IN THE PIG

By FRANK CHAMBERS, O.B.E., F.R.C.V.S.,
Wolverhampton.

It is common knowledge that a big percentage of male pigs are born with scrotal hernia, and in a pedigree herd this condition entails much loss, as pigs which are "broken" are usually destroyed.

The operation as described was undertaken not to cure the condition in order that the boar might be sold for stud purposes—for most breeders are of the opinion that the condition is transmissible—but to see if the condition might be cured.

As far as our knowledge goes, a certain sow will always have one or more "broken" pigs in each litter. I doubt if the question of the boar transmitting the condition has ever been considered, as no breeder of repute would use a "broken" boar. These young pigs—two months old—have been operated on, all with complete success.

The pig is starved for twenty-four hours. A dose of castor oil is administered at the first hour.

After securing the animal on the table (Hobday's), the area over the inguinal ring is shaved. Anæsthesia is induced with A C E mixture. The hind quarters are raised by placing a block of wood under the back and the contents of the hernia reduced. The skin

is now painted with iodine and a boiled linen sheet with a hole cut in it of required size is placed over the patient. The hands having been thoroughly scrubbed (I use Parke Davis 2 per cent. Mercurial Soap), an incision is made over the external inguinal ring and the sac dissected out. It is cleared from the accompanying fat, etc. The spermatic cord is pressed to one side and the free portion of the sac grasped with artery forceps—two pairs at half an inch distant as close as possible to the external ring. A silk ligature is passed through the free portion of the sac as close as possible to the cord and is tied on the dorsal surface. The external wound is sutured with silkworm gut painted with flexile collodion, and the patient allowed to come out of the anæsthetic.

There is always a certain amount of swelling afterwards, but in all three cases there was no interference with the circulation of the spermatic vessels, as evidenced by the testicle on the affected side retaining its normal size.

AMPUTATION OF THE RECTUM IN PIGS

By J. S. HOBAN, M.R.C.V.S.,
Whitchurch.

WITHIN the past six months I have had opportunities of doing this on three occasions in cases of chronic prolapse in young pigs. Of the three only one recovered—the oldest of the subjects. The others died within three days, but on post-mortem nothing to account for death could be found, though they appeared to have got over the immediate shock of the operation.

The procedure was similar in all cases: a thermometer case was inserted into the passage through the prolapsed mass, the bowel drawn further out, and a series of sutures inserted close up to the tail, and the bowel behind the sutures removed. There was little hæmorrhage, and food was taken when offered—an hour or so later.

With these results in view I decided to leave one case alone—that of a sow, which at farrowing had caused the rectum to become everted. The condition had become chronic, and though it still protrudes she reared her litter, and is now being fattened, apparently suffering no inconvenience from the prolapse.

Abstracts of Current Literature

Gebauer, W.—A Case of Spurious Abdominal Pregnancy.—*Tierärztliches Archiv*, March 1, 1923.

GEBAUER was called to a cow on December 1922 which had been straining badly for eighteen hours. The owner stated that she had calved two dead calves previously after having been in labour a day. On examination I found left-sided pregnancy and ten to twelve large cotyledons in the left horn of the uterus. I could feel nothing further in the uterus, but in its upper wall I could plainly feel a calf, so I examined further *per rectum*. I found lying on the womb a not very large calf which was exhibiting lively movements. I thought immediately of an abdominal pregnancy, and told the owner it might have to be removed by an operation. It was decided to leave her for a day, but in the morning there was no difference, so the calf was delivered by Cæsarean section; both ocular cavities were without eyeballs and the tail only developed rudimentarily. After slaughter the cow showed the following state: The left horn of the uterus was about the size of a child's head, filled with twelve large cotyledons. At the dorsal wall the navel cord went through a hole about the size of a five-crown piece into a cavity which was surrounded by a strong membrane about 1 millimetre thick, which contained the fœtus. Round the hole a muscular ring was plainly feelable, which held the navel string firmly grasped. The calf, which was very small, was suckled by a foster mother and afterwards slaughtered.

Bodin, L.—Double Subluxation of the Patella in a Cow.—*Recueil de Médecine Vétérinaire*, June 15, 1922.

THE two hind legs in this cow were rigid, and she could not go out to pasture nor to the drinking-trough. She was eating, and giving plenty of milk and in good bodily condition. Bodin had her turned out for examination, and she went on her fetlock joints, the fronts of the fetlock coming in direct contact with the ground. Suddenly she got excited by a dog coming up, and a clicking noise, due to one patella slipping in, was heard, and she travelled on her fore legs, dragging the hind ones behind her. The case was evidently one of double subluxation of the patella. Operation as described by Hamoir in 1909 was resolved on.

On the standing animal it is easy to locate the internal tibio-patellar ligament, which is well defined and tense. An assistant seizes the horns and muzzle firmly, and another helper holds a figure-of-eight rope round the hocks. The internal region of the stifle is cleansed, shaved and asepticised.

With the aid of a bistoury the skin is incised for about an inch in the direction of the ligament. It is then easy to divide this ligament, taking care to limit the penetration of the bistoury and proceeding by sections repeated from front to back in order to avoid all accidents. Apart from the cutaneous incision, always painful, the animal pays no regard to the surgical manipulations.

The operation was performed on both the internal tibio-patellar ligaments, and the cow immediately returned to her stall without difficulty, and in a word quite normally.

No bandage was applied, but the owner was told to keep fresh and clean litter under the cow. The very narrow wounds healed up and cicatrised *per primam* in three or four days.

The case appears interesting to us from three points of view:—

1. The subluxation was double, and occurred in a cow in good condition (not thin and weak as stated in the text-books in such cows).

2. The operation, according to Bassi, can easily be made in the standing cow with a simple straight bistoury.

3. The results are immediate and astonish the owner.

Bruggemann. — Conservative Dentistry in the Horse. — *Deutsche Tierärztliche Wochenschrift*, No. 5, 1922.

THIS subject is well studied in America and receives much attention both in the clinics and in practice. Europe lags behind in the matter. In the Great War faulty back teeth were repaired successfully with hoof cement; the re-, trans- and implantations of dogs' teeth was undertaken as well as the stopping of alveoli, after

the tooth had been punched out, with gutta-percha. The author mentions the dental treatment of a horse in which an upper incisor was so injured that the alveolus was opened and pulpitis arose. Water was drunk with pain, and diminished appetite was noticeable. Locally there was heat and pain. After drilling out and laying open the pulp cavity, the hole was filled with arsenical paste and a temporary stopping of gutta-percha put in. After three days the cavity was reopened, cleansed and a provisory dressing of cresyl and formalin paste put in under gutta-percha, which was later on replaced by a definite copper amalgam filling. This procedure was carried out on the standing and twitched horse and was completely successful, the condition of the horse improved, and the stopping remained firm for months afterwards. The author recommends this treatment in valuable horses and dogs.

Egge, G.—Tuberculin in Fowl Tuberculosis. *Archiv für wissenschaft und prktsche. Trhlknde.*, 1921, vol. 47, p. 175.

Egge has applied tuberculin to a large number of fowls in the poultry yards and farms of Mecklenburg. Of 941 fowls inoculated, 93 reacted. On post mortem all the fowls that gave a positive reaction proved tuberculous. Egge states that inoculation must be carried out again soon, as negative reactors at first react positively in a few instances later on. Two readings of the reaction are necessary, namely, after the twenty-fourth hour and between the thirty-sixth and forty-eighth hour. Further, he recommends periodic tuberculinisation and thorough disinfection of premises, runs and utensils.

Pape, J.—Transmission of Foot-and-Mouth Disease to Man.—*Berliner Tierärztliche Wochenschrift*, July 28, 1921.

On the island of Riems the virus destined to immunise cattle is produced from swine artificially infected. The infected animals are fastened firmly on a table and the contents of the vesicles are collected in glass containers. A pig badly secured managed to free itself from its fetters and broke the vessel into which Pape was collecting the contents of the vesicles. A piece of glass wounded Pape's right hand, making a cut 2 to 5 centimetres in length. The wound was washed in a solution of lysol, sutured, and progressed normally towards healing.

Two days after the accident Pape had headache and rigors of short duration. He did not take his temperature, the illness being put down to slight indisposition. On the morning of the third day he had a painful sensation at the right heel, and perceived a vesicle

the size of a filbert nut, the origin of which he put down to friction from his boot. At midday numerous vesicles commenced to develop on his feet and hands. Pape counted twenty-five vesicles situated on the plantar surface of his feet and on the internal surface of his hands. All the aphthæ were transparent and showed a white or bluish colour, surrounded by a reddish aureole, clearly defining the vesicles. All the vesicles were filled with serosity, but were not fluctuating. There was no itching, but during the progress of the complaint a very painful tension in the feet.

The vesicles enclosed a citrine serosity identical with that of the vesicles of cattle, pigs and guinea-pigs. The base of the vesicles showed a cherry-red colour, and continued to secrete lemon-coloured fluid for several hours after opening of the blisters. Cure occurred in four or five days after draining of the vesicles.

Trottet, E.—Contribution to the Study of the Determining Causes of the Formation of the Sexes.—*Doctorate Thesis,* Berne, 1922.

THIS memoir contains the results of very extensive research undertaken at the instance of Professor Duerst. The experiences have continued for several years, they comprise observations taken on several hundred subjects. These are the conclusions at which the author arrives: It is possible, by certain procedure, to disturb the natural proportion of the sexes. Unilateral castration has no influence. Injections of adrenalin made during *the first fifteen days of gestation,* in rabbits, led to a great predominance of males. The period during which one can influence the sexes is short; it extends from the tenth to the fifteenth day of gestation; this period is that during which sexual differentiation takes place. The adrenalin, it seems, acts by inducing a failure of oxygen in the embryo; this defect is itself due to vasoconstriction in and about the placenta.

This procedure ought to be quite capable of verification in the bitch, and we shall be glad to hear of any results from its application. If effective its value is apparent.

Trillat.—Influence of Weather Agents on the Propagation of Epidemics.—*La Médicine,* December, 1921.

THE liquid droplets condensed around microbes can be spread by the wind, these microbes preserving all their virulence. Hence their danger.

The expired air representing the most favourable vehicle for microbes, as certain epidemics of influenza demonstrate. The method of contagion by the pulmonary way with the help of droplets that divide the microbian hordes is the most frequent; it is accompanied

by the sowing of the microbes on the buccal, rhino-pharyngean, and conjunctival mucosæ.

Schin, K. H.—Clinical Observations on Pica.—Inaug. Dissert., Berlin, 1922, *B.T.W.*, February 6, 1923.

THE author reviews the different theories on the cause of licking disease such as poisoning by toxin, vitamine hunger and over acidity of digestion. He made clinical observations on thirty-two cows, heifers and calves, as well as four foals, and watched them closely. Calves and first-time calvers were mostly affected. Besides staring coat, anæmic and emaciated appearance, as well as licking and gnawing, there were marked disorders of the digestive apparatus. Feeding and rumination were frequently at a standstill. Rumen murmurs were noticeably weak, as also the number of rumen movements (according to the degree of illness diminished from one-fourth to one-eighth in a minute). The urine was acid, and very scanty when no food was taken, and great weakness was evident. For the treatment the best agent was beetroot molasses.

Hansen, Dr. A.—Death of Two Pigs from Electric Shock.—*Berliner Tierärztliche Wochenschrift*, February 6, 1923.

HANSEN was called to two dead store pigs, and found on the larger one a brown crusted furrow running round the throat, burning the skin and separating the jaws. The subcutaneous fatty tissue was a greasy oily mass, and the tongue, throat and larynx were like cooked flesh. These conditions were attributed to burning, and it was suspected that there was a defective electric current in the pigs' abode. On examination it was found that an electric wire ran through and down an iron gate at the entrance to the abode, and the owner's son stated that in damp weather he often felt the electric stream through his boots as he entered the stall. Evidently the pigs had been uncomfortable when lying on the damp ground, and had made strong efforts to get out at the iron door, and the larger pig had received a full shock by contact with the whole snout against the door and the smaller had touched the door with the point of the snout. The stream had been playing on the larger pig the whole night. Both pigs were dead when found in the morning.

The Roundworm in Surgery.—*The Medical Press and Circular.*

THE surgical importance of the roundworm is less evident, or perhaps less appreciated, in these islands than on the Continent and in warmer countries. Leo, reviewing the subject at a meeting of the Société des Chirurgiens de Paris (December 2, 1922), records cases where these parasites caused obstruction by forming tangled masses

consisting of from 1,000 to 5,000 worms. In one instance a child, aged twelve, had passed as many as 600 worms in a day. Apart, however, from mechanical obstruction due to their aggregate mass, these parasites appear to produce toxins capable of causing intestinal paresis, and this often occurs post-operatively in hosts who harbour the worms. In French Guiana, where carriers are legion, it is the practice in some surgical clinics to submit patients to a routine course of anti-helminthic treatment before operation. The symptoms of ascaris toxæmia following operation may be very alarming, and may include a peritoneal facies, leaden complexion, and vomiting. The pulse and temperature, however, are not increased. Harnowski, as early as 1906, emphasised the great importance of determining the presence of the parasite before operation. Ascaridosis may, in addition, cause irritative phenomena, and may lead to intestinal ulceration and stenosis, or to intussusception, and the migration of the worm into the bile ducts has been repeatedly recorded. Leo concludes by suggesting that clinicians are hypnotised by the bacterial aspects of intestinal disease to the neglect of common parasites, and that even in temperate climates these must never be forgotten.

THE "FIELD" DISTEMPER FUND

"VETERINARY JOURNAL" FIFTH SUBSCRIPTION LIST)

	Annual Subscriptions. £	s.	d.	Donations. £	s.	d.
Brought forward from last List	76	13	0	78	4	0
Second donation from Officers, R.A.V.C., serving in India				4	0	0
Messrs. Stainton & Little, F.R.C.V.S. ..	2	2	0			
G. P. Male, Esq., F.R.C.V.S.	2	2	0			
Lady Troubridge (Dixon Collecting Cards), per Mrs. Saunders and Miss Thompson				3	6	6
Total to date	£80	17	0	£85	10	6

NOTICES

All communications should be addressed to 8 Henrietta Street, Covent Garden, London, W.C.2. Telephone: Gerrard 4646. Telegrams: "Baillière, Rand, London."

Illustrations for reproduction should be in good black or dark brown ink on white paper or card.

Annual Subscription, 21s. ($5.00 U.S.A. currency) post free.